March 2018

Water Year 2017 Report for the Santa Clara and Llagas Subbasins

Santa Clara Valley Water District

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Water Year 2017 Report for the Santa Clara and Llagas Subbasins

Prepared by:

Bassam Kassab, P.E.
Senior Water Resources Specialist

Under the Direction of:

Vanessa De La Piedra, P.E.
Unit Manager
Groundwater Management Unit

Garth Hall, P.E.
Deputy Operating Officer
Water Supply Division

Nina Hawk
Chief Operating Officer
Water Utility Enterprise

Norma J. Camacho
Chief Executive Officer

March 2018

Santa Clara Valley Water District

Contributors:

Chanie Abuye
Ardy Ghoreishi

Graphic Design:

Joy Lim
Emily Cheung

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Executive Summary

EXECUTIVE SUMMARY

The Santa Clara Valley Water District (District) is the Groundwater Sustainability Agency for the Santa Clara and Llagas subbasins (Basins 2-9.02 and 3-3.01, respectively) in Santa Clara County, which are sustainably managed due to the comprehensive programs described in the District's 2016 Groundwater Management Plan (Plan).[1] This Water Year 2017 Report for the Santa Clara and Llagas Subbasins provides information on groundwater conditions and management as required by the Sustainable Groundwater Management Act (SGMA).[2]

In Water Year (WY) 2017, groundwater elevation and storage conditions in both subbasins were generally very good, with recovery to pre-drought conditions. Countywide groundwater pumping was about 115,300 acre-feet (AF), providing 41 percent of the water used by county residents and businesses. Due to improved rainfall conditions and available surface water supplies, the District operated a full managed recharge program, using about 96,800 AF of local and imported water to replenish the subbasins. In-lieu recharge programs included District treated water deliveries (104,700 AF) and recycled water use (16,800 AF). Countywide water conservation programs reduced overall demands by about 72,000 AF. Managed recharge continues to be a major inflow to both subbasins, helping to maintain a balanced long-term water budget. In WY 2017, the inflows exceeded outflows, resulting in a net increase in groundwater storage of about 31,000 AF and 7,000 AF in the Santa Clara and Llagas subbasins, respectively.

In WY 2017, the District evaluated new SGMA authorities in coordination with interested stakeholders. As a result, the District is exploring a fixed charge as a potential component of groundwater production charges. The District and interested stakeholders also developed a process to respond to hypothetical worsening basin conditions. This describes the steps that would be taken prior to regulating groundwater pumping, with a focus on providing some certainty while avoiding prescriptive requirements that may not be appropriate or effective. This process was memorialized via resolution adopted by the District Board on February 27, 2018 (Appendix A). The process notes that strong programs and partnerships are expected to result in continued, sustainable conditions and are the preferred approach to address future challenges.

The District will continue to sustainably manage the Santa Clara and Llagas subbasins as a central part of our mission to provide Silicon Valley safe, clean water for a healthy life, environment, and economy. Implementation of the Plan helps ensure continue sustainability in accordance with the District Act, SGMA, and District Board policy to "aggressively protect groundwater from the threat of contamination and maintain and develop groundwater to optimize reliability and to minimize land subsidence and salt water intrusion."

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[1] This Plan was submitted to the Department of Water Resources as an Alternative to a Groundwater Sustainability Plan. Per state requirements, an annual report must be submitted by April 1 of each year following District adoption of the Plan.

[2] The District produces a comprehensive Annual Groundwater Report based on the calendar year. This report provides detailed information on groundwater levels, storage, land subsidence and groundwater quality conditions, and is posted to the District website at: https://www.valleywater.org/your-water/where-your-water-comes-from/groundwater.

CHAPTER 1 – INTRODUCTION

For nearly 90 years, the Santa Clara Valley Water District (District) has managed groundwater in the county under the District Act.[3] In December 2016, the District submitted its Board-adopted 2016 Groundwater Management Plan (Plan)[4] to the Department of Water Resources (DWR) as an Alternative to a Groundwater Sustainability Plan under the Sustainable Groundwater Management Act (SGMA). The District's comprehensive groundwater management programs and investments described in the Plan have resulted in sustainable groundwater conditions for many decades, and will ensure groundwater resources are sustainable far into the future.

Under the California Code of Regulations Title 23, Division 2, Chapter 1.5, Subchapter 2, Article 7, §356.2, each agency shall submit an annual report to DWR by April 1 of each year following adoption of the Plan. This report for Water Year (WY) 2017 covers the Santa Clara Subbasin (DWR Basin 2-9.02) and the Llagas Subbasin (Basin 3-3.01), which are managed in their entirety by the District. Figure 1 shows the location of the two groundwater subbasins.

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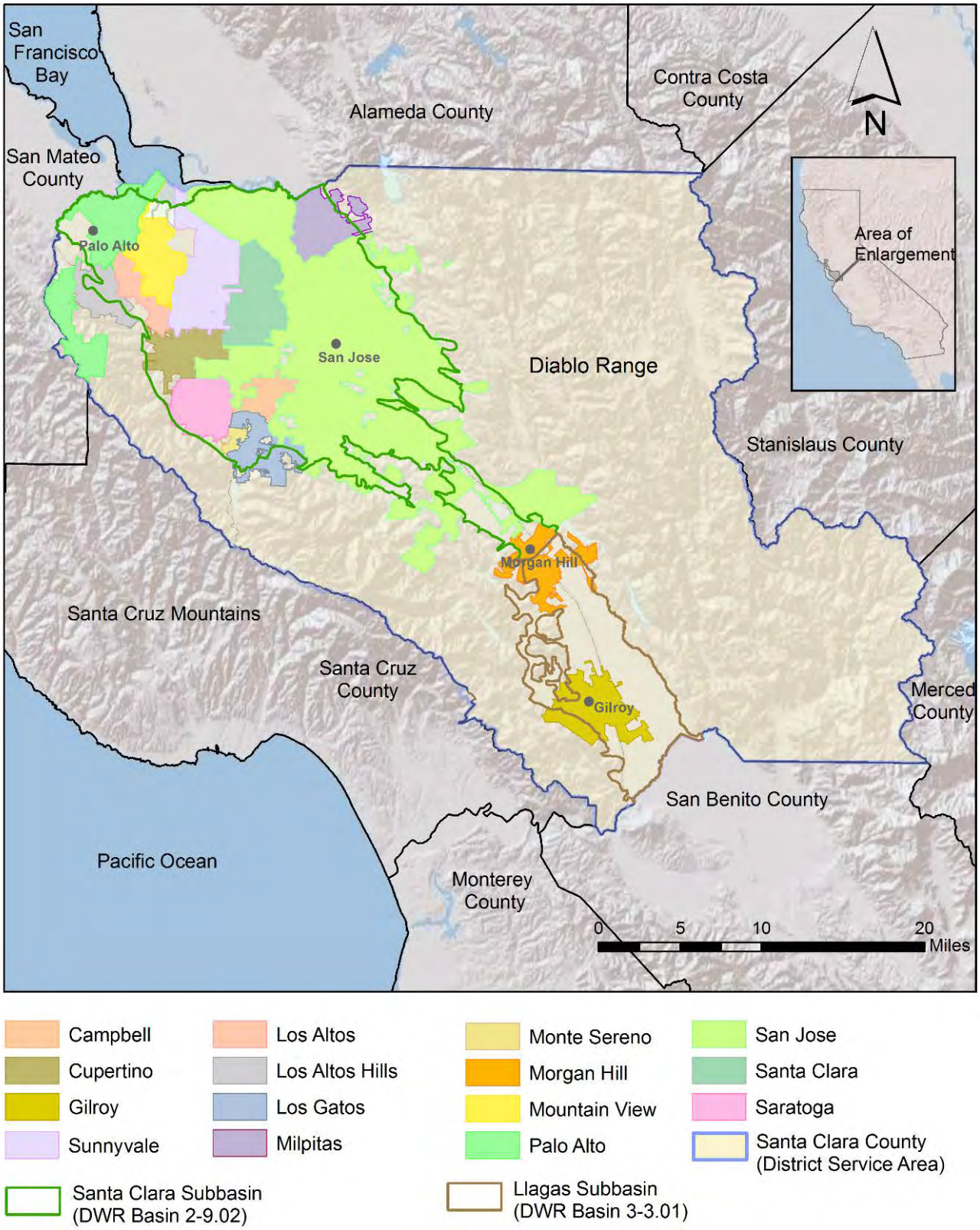
[3] Santa Clara Valley Water District Act, Water Code Appendix, Chapter 60.
[4] https://www.valleywater.org/your-water/where-your-water-comes-from/groundwater

Figure 1. Location Map



Campbell
Cupertino
Gilroy
Sunnyvale
Los Altos
Los Altos Hills
Los Gatos
Milpitas
Monte Sereno
Morgan Hill
Mountain View
Palo Alto
San Jose
Santa Clara
Saratoga
Santa Clara County (District Service Area)
Santa Clara Subbasin (DWR Basin 2-9.02)
Llagas Subbasin (DWR Basin 3-3.01)

CHAPTER 2 – GROUNDWATER ELEVATION DATA

The District tracks groundwater elevations, groundwater quality, and land subsidence through a countywide groundwater monitoring program. The District collected monthly groundwater elevation readings at 174 wells in the Santa Clara Subbasin and 58 wells in the Llagas Subbasin in WY 2017. Furthermore, water retailers shared groundwater elevation data at around 100 wells with the District. While this report provides a summary of water levels at individual wells, all available countywide groundwater elevation data are accessible through the District website.[5] The District also regularly uploads groundwater elevation data to the California Statewide Groundwater Elevation Monitoring (CASGEM) program database.

Groundwater elevation contour maps for the Santa Clara and Llagas subbasins and related measurement locations are presented in Figures 2 and 3 for Spring 2017 and Fall 2017, respectively.[6] These contours represent the principal aquifer within the subbasins. Seasonal high groundwater conditions typically occur in March or April, with seasonal lows in September or October. The spring and fall maps were created using the water level readings measured closest to March 31, 2017 and September 30, 2017, respectively.

This report presents historical groundwater elevation data from 11 selected wells in the Santa Clara and Llagas subbasins (Figure 4); these monitoring wells are spatially distributed within the two subbasins and various cities in the county. Hydrographs for these wells show the static water level trend over the period of record, which varies by well (Figure 5). Due to improved water supply conditions, continued managed recharge, and significant precipitation in the winter of 2017, groundwater elevations generally returned to pre-drought conditions in WY 2017. WY 2017 groundwater elevations remained above the historical minima and levels seen during the last major droughts of 1987-1992 and 2012-2016. Groundwater elevations were also well above District thresholds established to minimize the risk of land subsidence in the Santa Clara Subbasin throughout WY 2017.[7]

[5] https://gis.valleywater.org/GroundwaterElevations
[6] Groundwater elevations in this report use the National Geodetic Vertical Datum of 1929 (NGVD29).
[7] As described in the Plan, land subsidence was an issue historically in the central and northern Santa Clara Subbasin. See the Annual Groundwater Report for Calendar Year 2016 for a detailed discussion of subsidence monitoring: https://www.valleywater.org/your-water/where-your-water-comes-from/groundwater

Figure 2. Spring 2017 Groundwater Elevation Contours

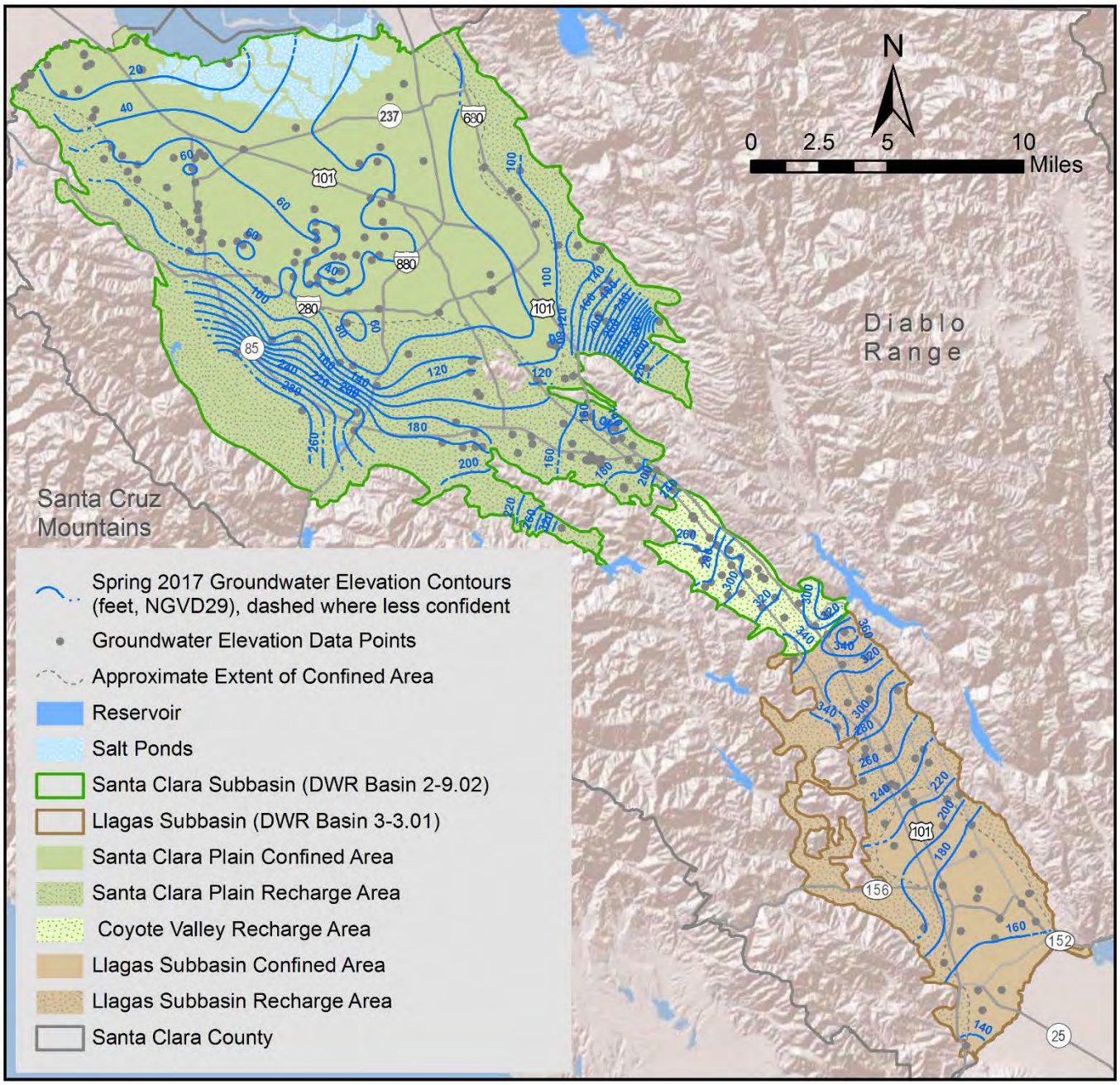


Figure 3. Fall 2017 Groundwater Elevation Contours

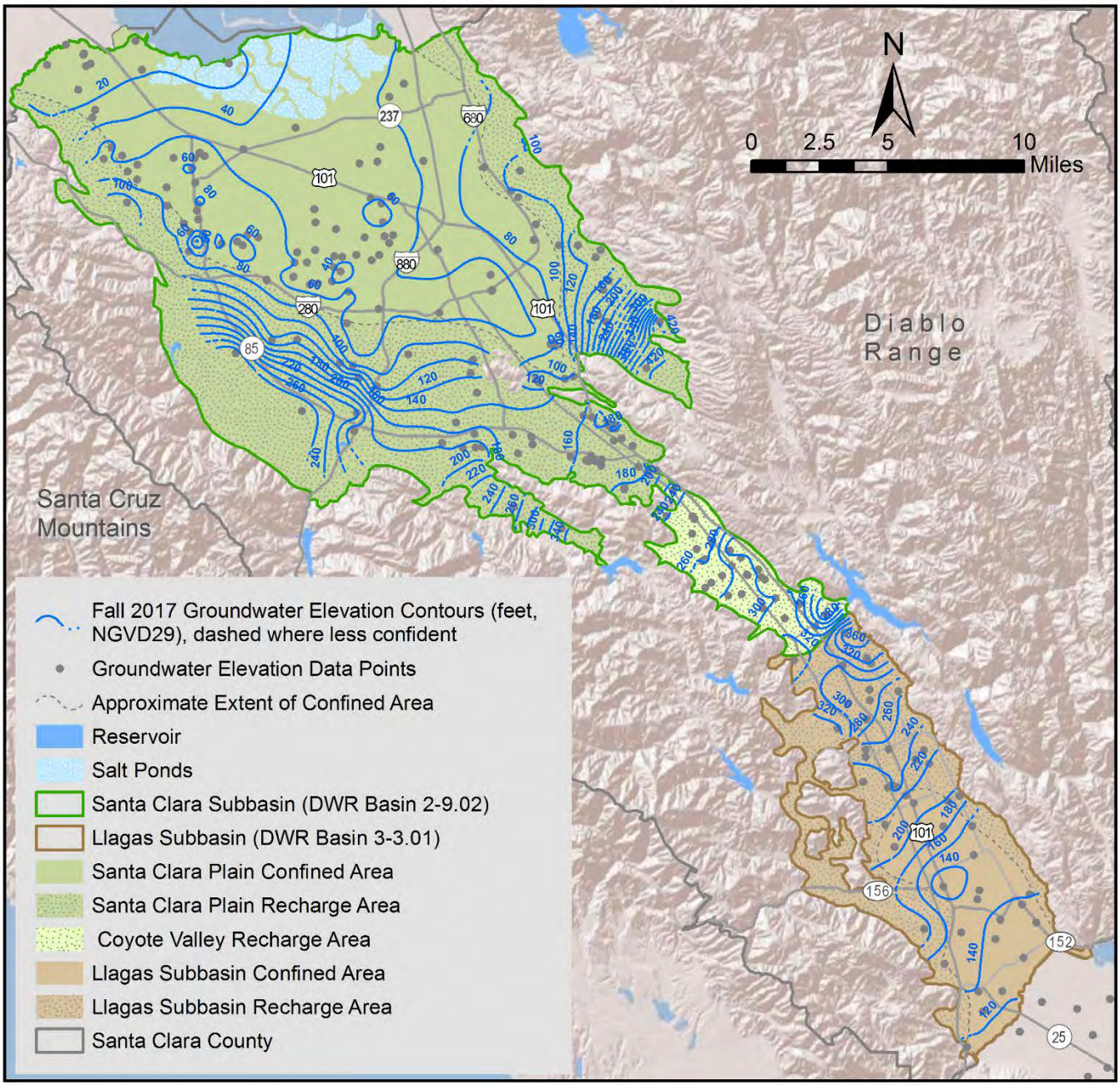


Figure 4. Locations of 11 Selected Monitoring Wells

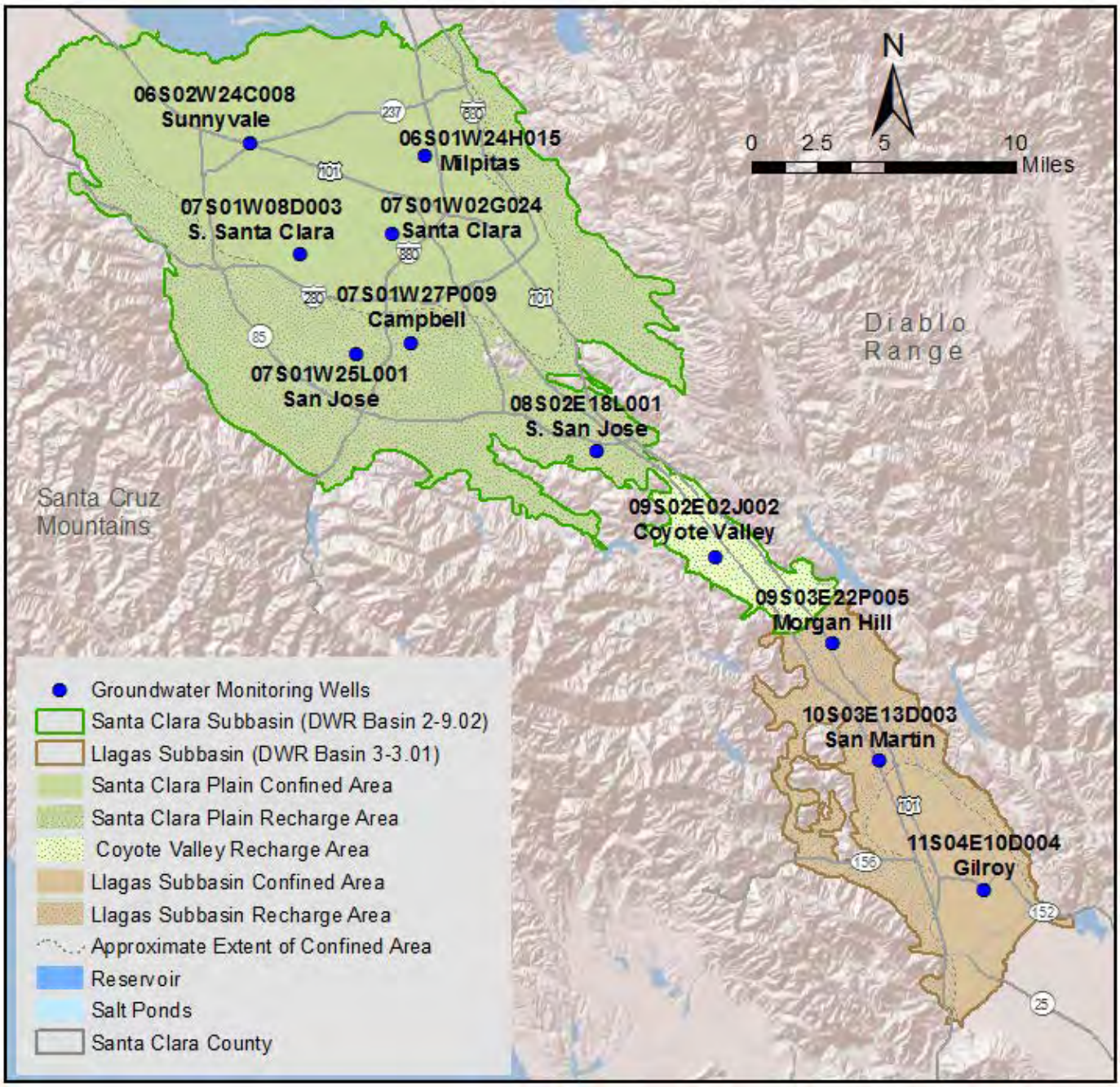
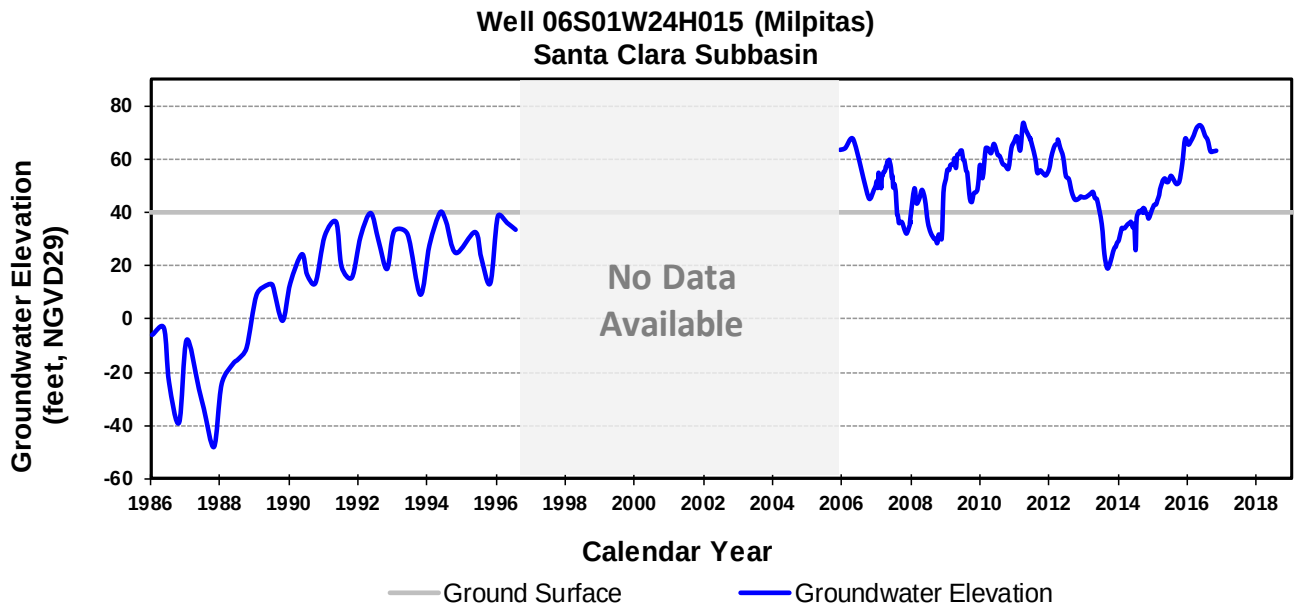
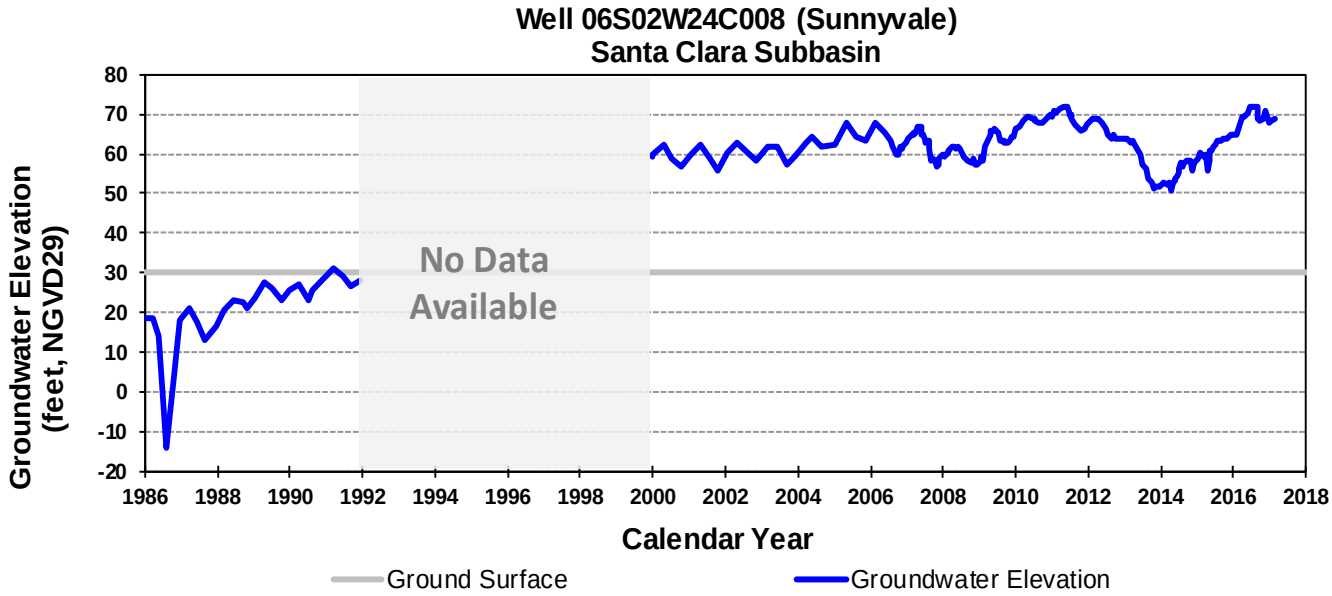


Figure 5. Hydrographs at 11 Selected Wells

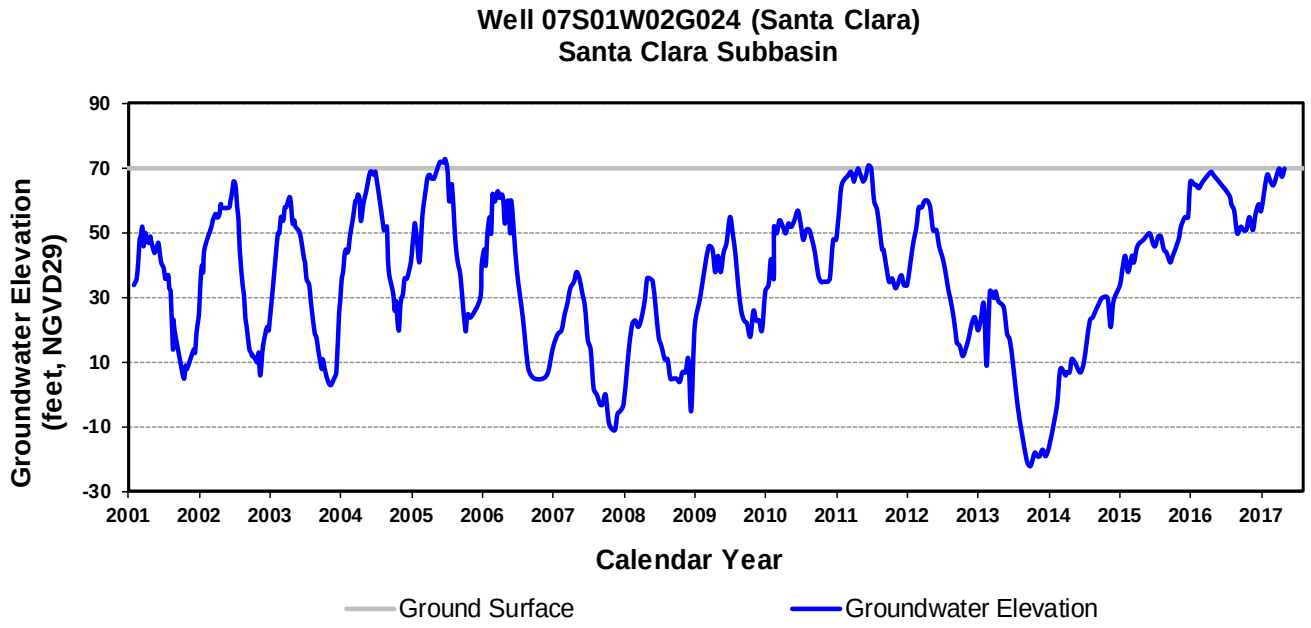


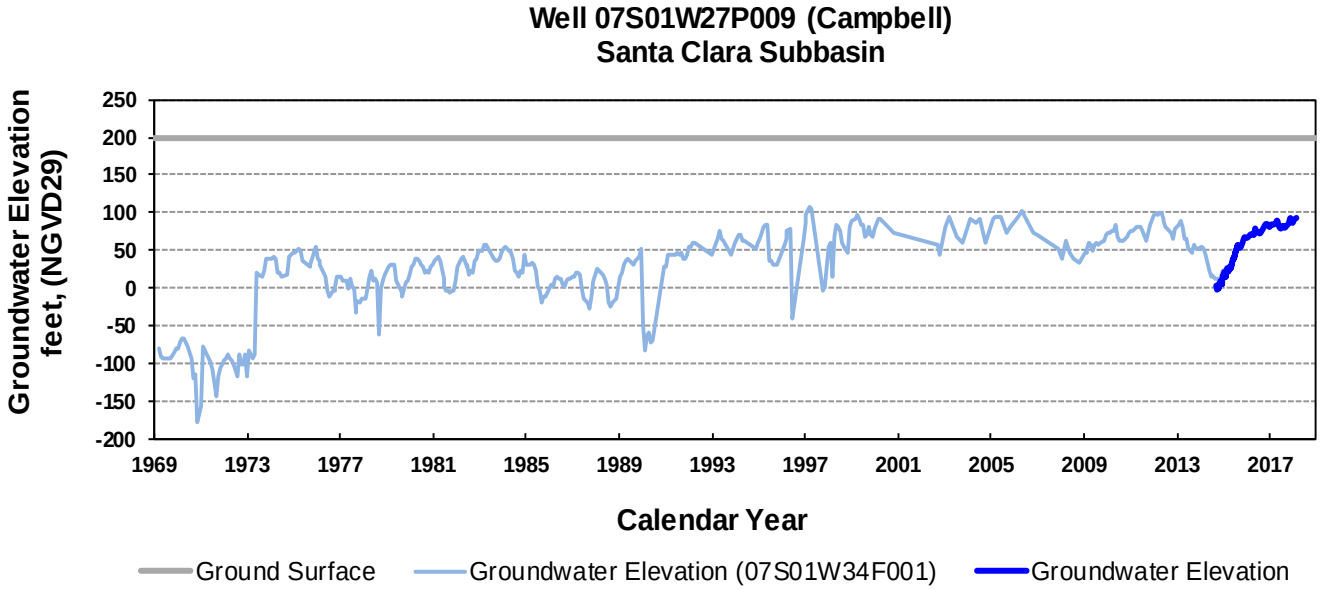
During period with no data available, well was observed to be artesian but there was no pressure gauge installed.



During period with no data available, well was observed to be artesian but there was no pressure gauge installed.

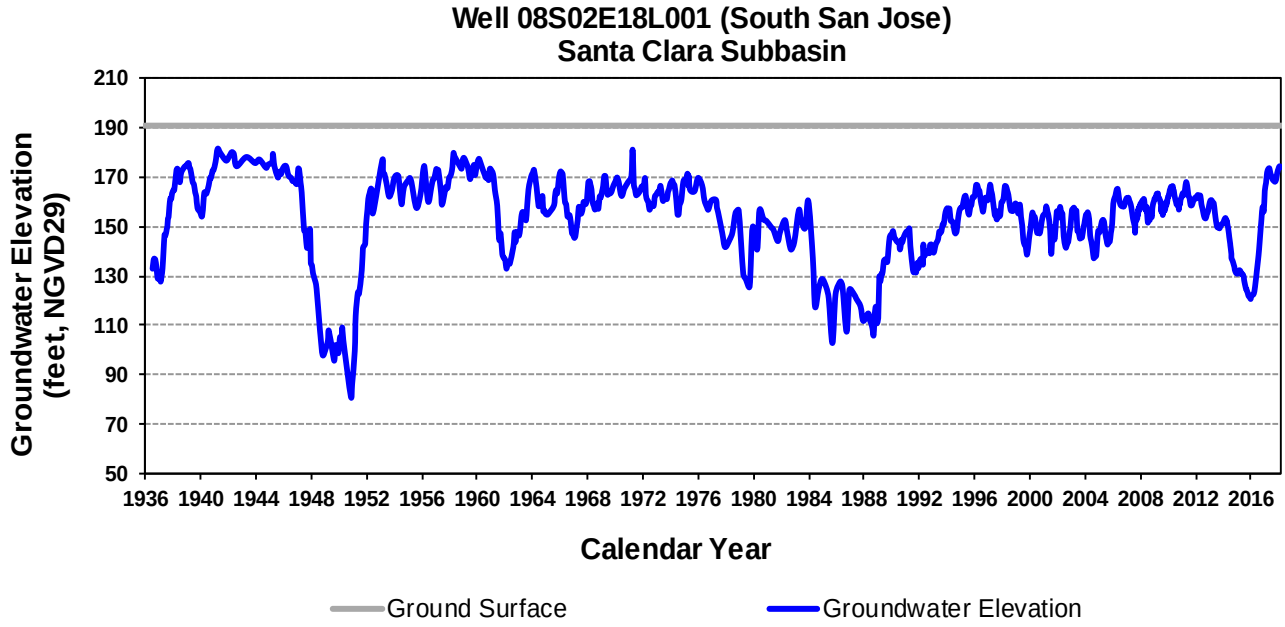
Figure 5. Hydrographs at 11 Selected Wells (continued)





The Campbell well was replaced in August 2015 with a nearby well with similar water level history.

Figure 5. Hydrographs at 11 Selected Wells (continued)



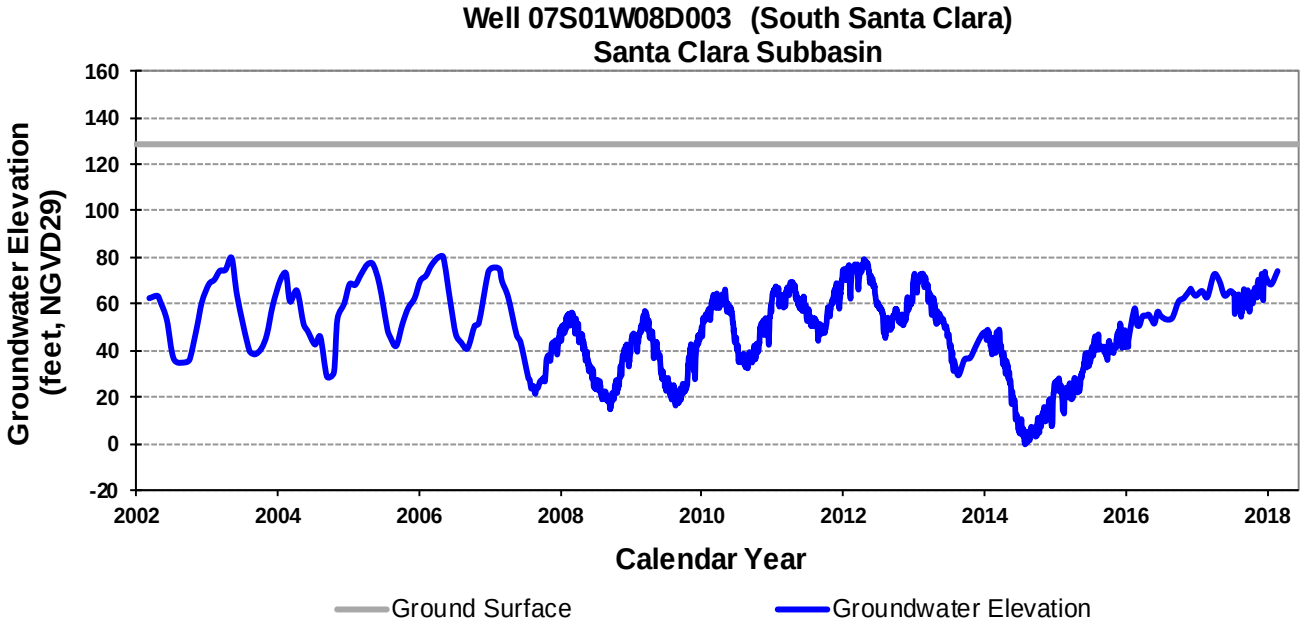
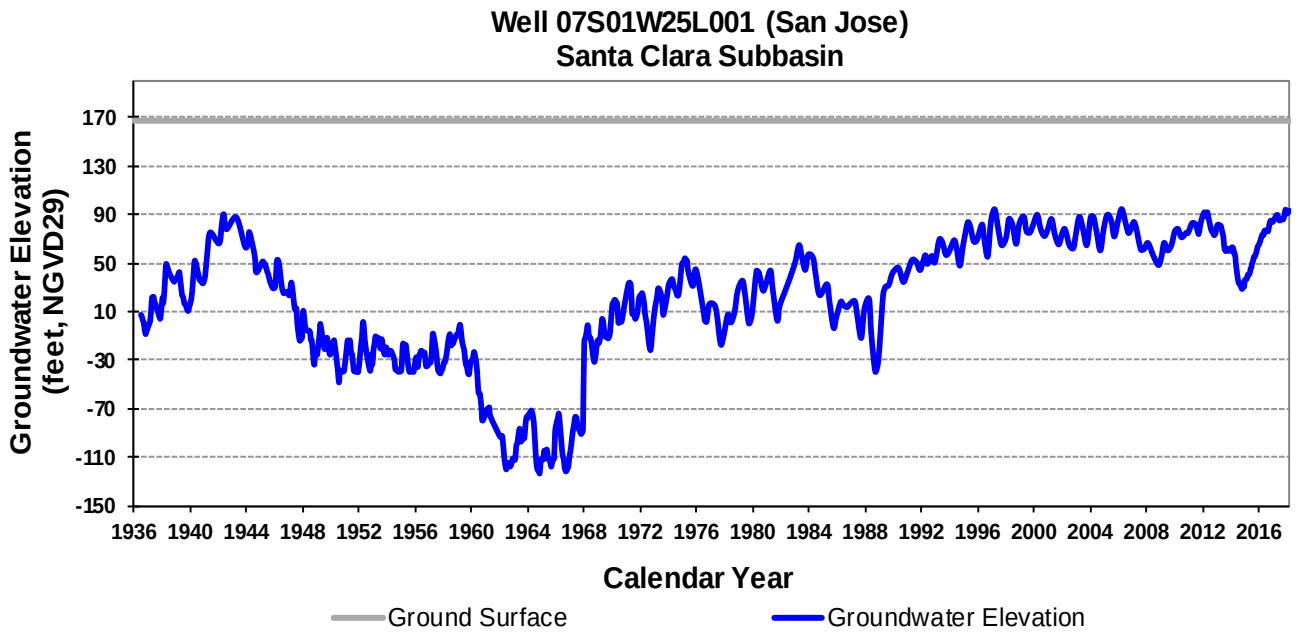


Figure 5. Hydrographs at 11 Selected Wells (continued)



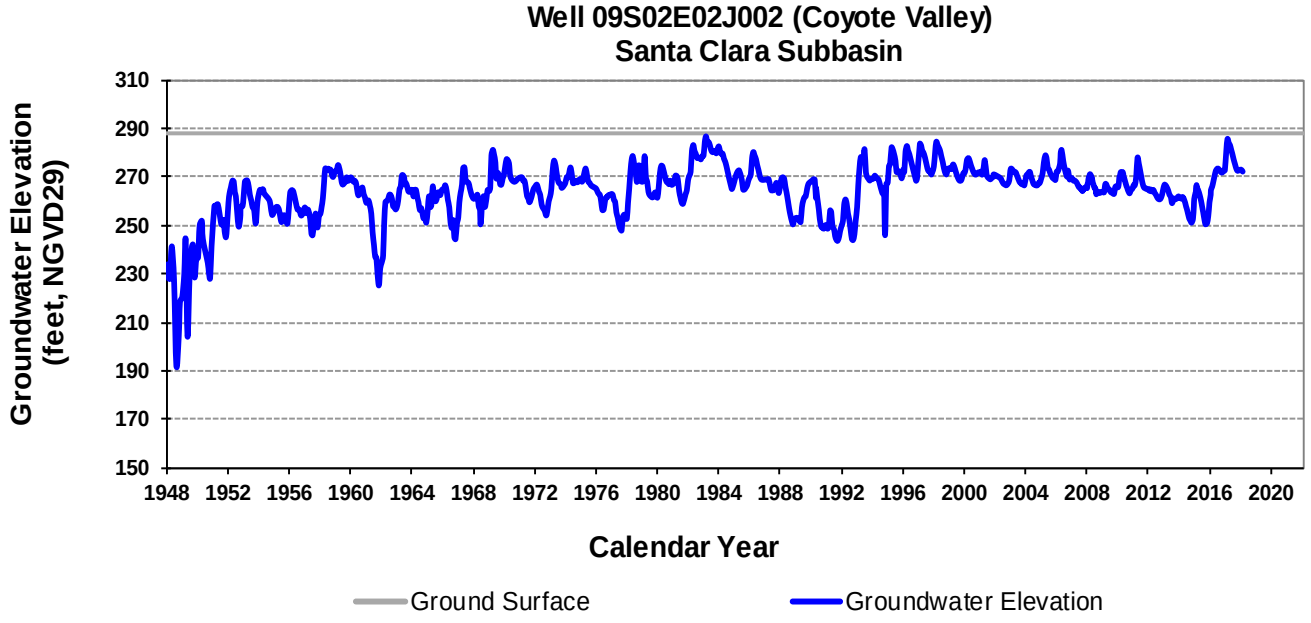
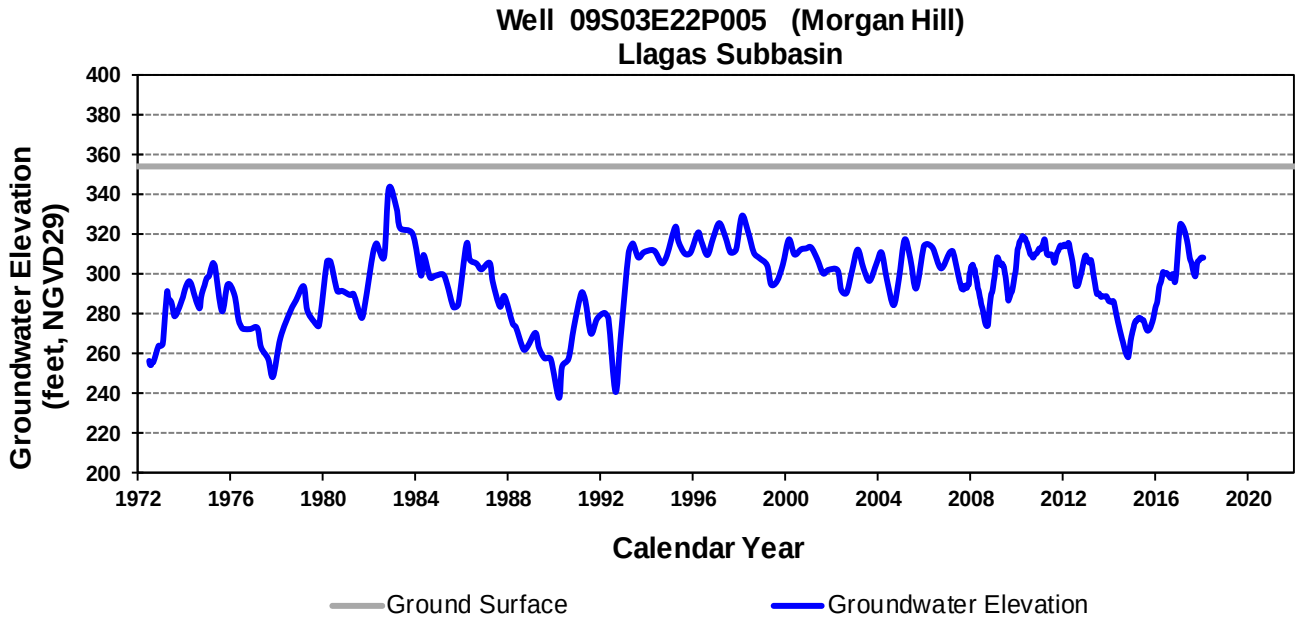


Figure 5. Hydrographs at 11 Selected Wells (continued)



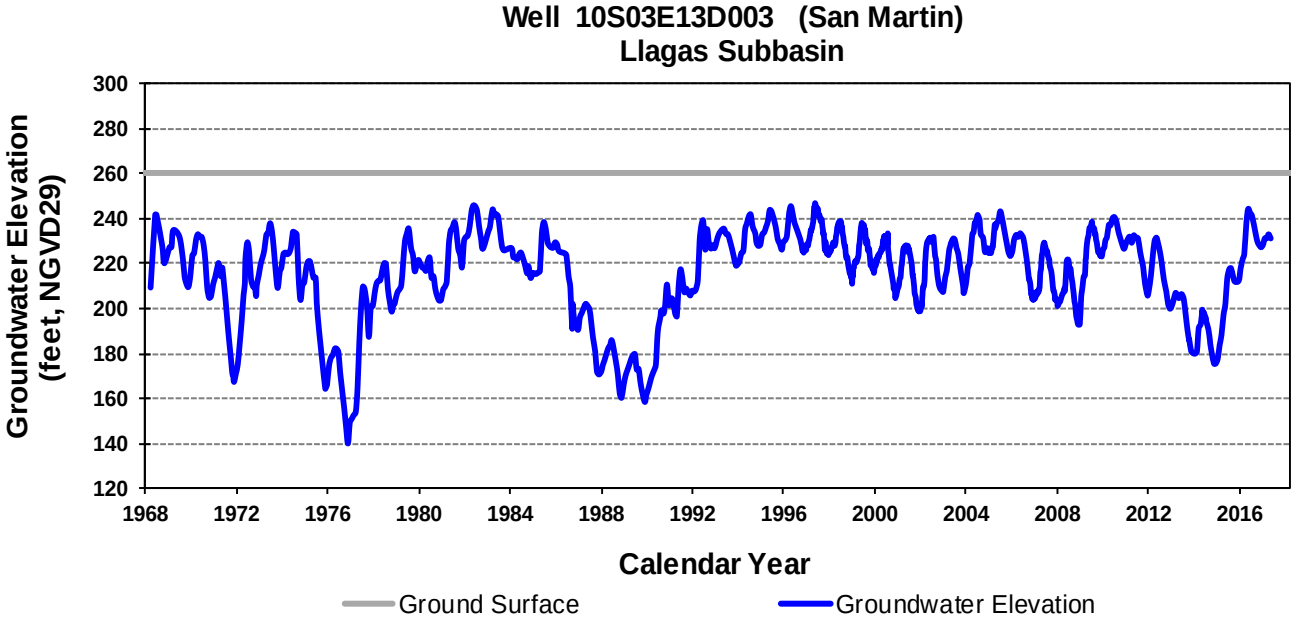
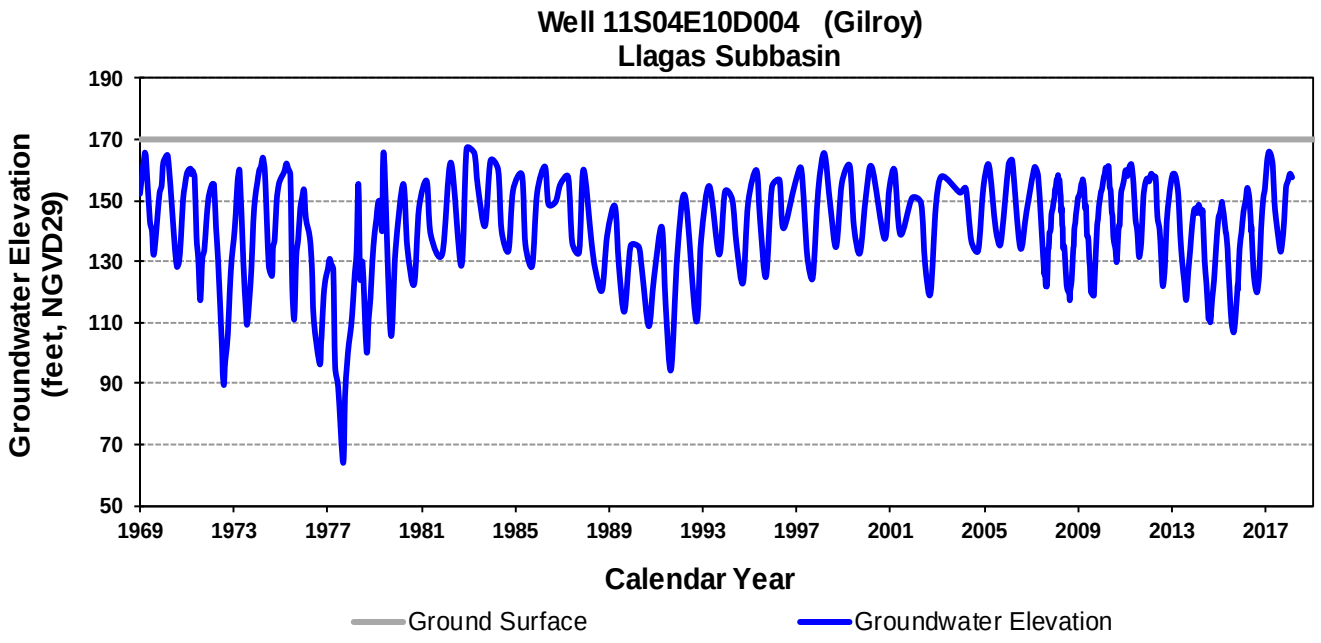


Figure 5. Hydrographs at 11 Selected Wells (continued)



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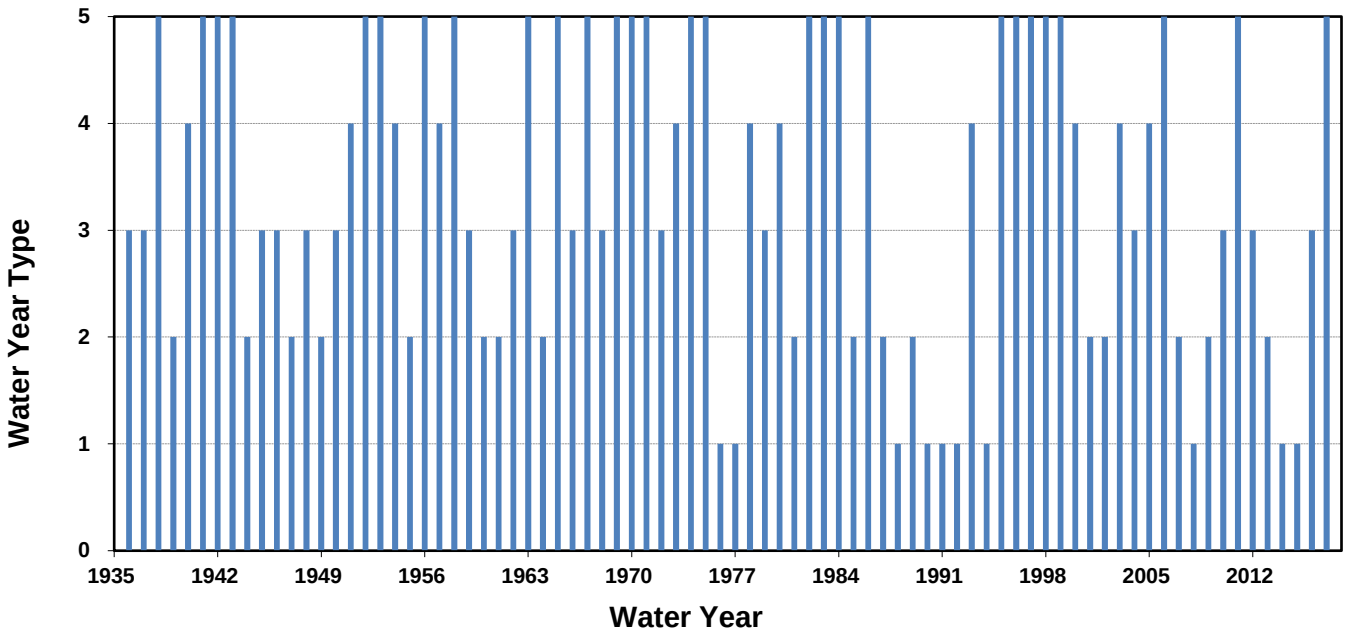
WY 2017 was a wet year per the DWR Sacramento River Index (SRI). The District uses historical SRI water year types (Figure 6) to model hydrologic conditions in Santa Clara County as it reflects conditions in the Sierra and the Sacramento-San Joaquin Delta that influence the District's imported water deliveries. Rainfall stations within Santa Clara County confirm that the rainfall season from July 1, 2016 to June 30, 2017 was wetter than the historical average. For instance, rainfall in downtown San Jose (Station 131) was approximately 17.2 inches or 120 percent of average.

Figure 6. Water Year Types from WY 1936 to 2017 – Sacramento River Index (SRI)



Water Year Types per DWR SRI: 1 (Critical); 2 (Dry); 3 (Below Normal); 4 (Above Normal); 5 (Wet)

CHAPTER 3 – WATER SUPPLY AND USE

The District manages a diverse water supply portfolio, with sources including groundwater, local surface water, imported water, and recycled water. About half of the county's water supply comes from local sources with the other half from imported sources. Imported water includes the District's State Water Project (SWP) and Central Valley Project (CVP) contract supplies, and supplies delivered by the San Francisco Public Utilities Commission (SFPUC) to cities in northern Santa Clara County. Local sources include natural groundwater recharge and surface water supplies. A small but growing portion of the county's water supply is recycled water.

District surface water supplies are distributed to managed recharge facilities in the Santa Clara and Llagas subbasins, drinking water treatment plants, local creeks for environmental needs, or directly to water users. The conjunctive management of surface water and groundwater maximizes water supply reliability, allowing the District to store surface water in local groundwater basins to help balance pumping and provide reserves for use during dry years.

3.1 Groundwater Extraction

Countywide groundwater pumping in WY 2017 was about 115,300 acre-feet (AF), providing 41 percent of the water used by county residents and businesses. Figure 7 shows the location and volume of groundwater pumping in WY 2017 in the Santa Clara and Llagas subbasins.

Groundwater in the Santa Clara Subbasin was used primarily for municipal and industrial (M&I) purposes (about 96% of pumping), with some agricultural and domestic use, mainly in the more rural Coyote Valley in the southern part of the subbasin. In the Llagas Subbasin, agricultural use was more significant, accounting for about 56% of the total pumping. While the quantity of groundwater used for domestic purposes was relatively small in the Llagas Subbasin, nearly 2,000 individual wells reported groundwater use in WY 2017. Table 1 summarizes WY 2017pumping by subbasin, water use category, and measurement method and accuracy.

The amount of groundwater pumped from the groundwater subbasins is recorded in accordance with the District Act, which requires owners to register all wells within the District's groundwater management zones and to file production statements with the District on either an annual, semi-annual or monthly basis depending on the amount of water produced. By District Board Resolution, meters are only installed at those sites determined to be economically feasible per approved criteria or as required to facilitate the complete and accurate collection of groundwater production revenue. In the Santa Clara Plain, meters are required for facilities producing more than 4 AF of agricultural water or more than 1 AF of non-agricultural water annually. Within the Coyote Valley or Llagas Subbasin, meters are required for facilities producing more than 20 AF of agricultural water or more than 2 AF of non-agricultural water.

Metered wells extracted the vast majority (90%) of the groundwater used in WY 2017. Where meters were not used, crop factors were used to determine agricultural water use, whereas domestic use was estimated from a table of average uses.

Figure 7. WY 2017 Groundwater Pumping in the Santa Clara and Llagas Subbasins

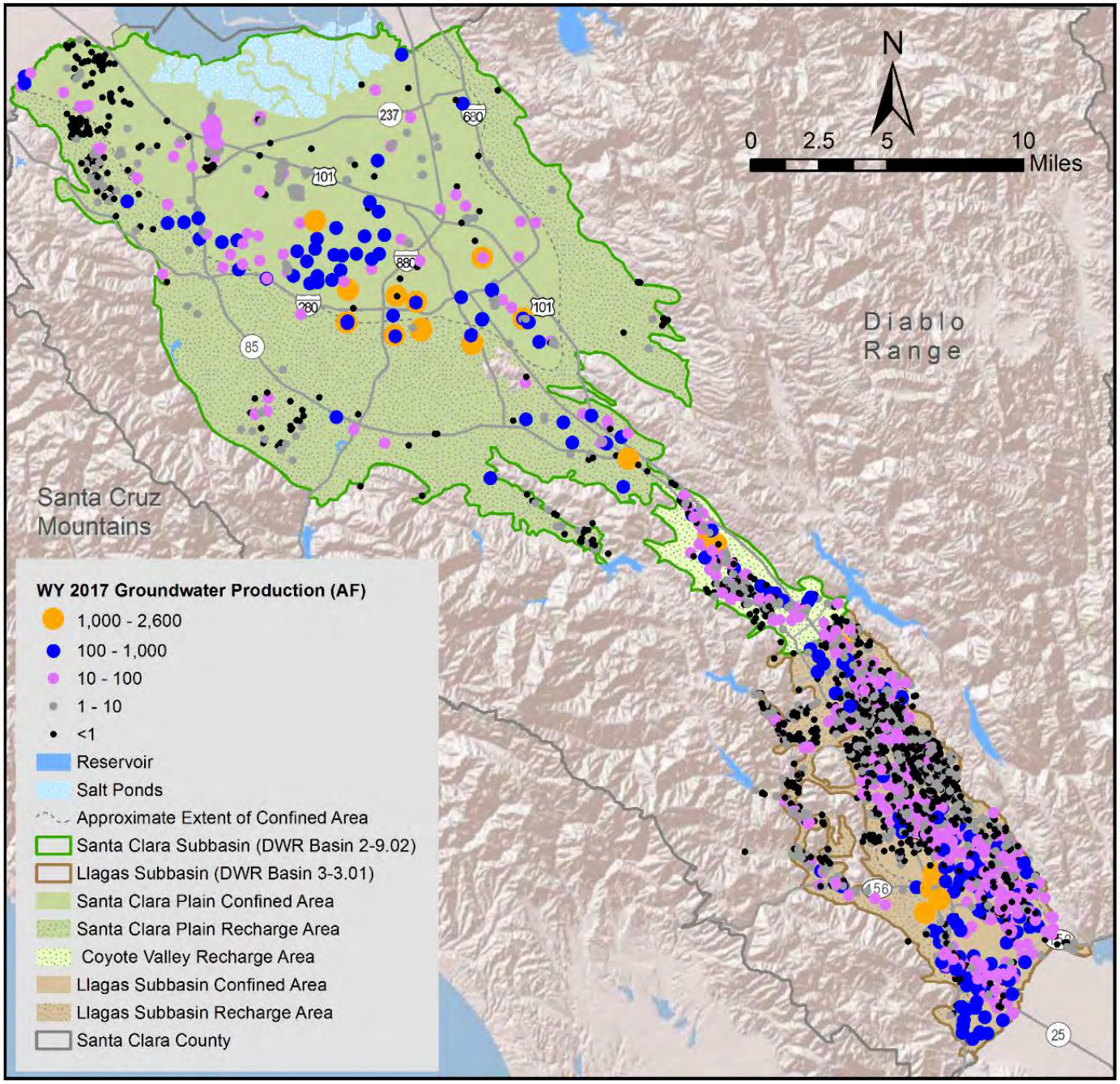


Table 1. WY 2017 Groundwater Pumping (AF) by Water Use

Water Use Sector	Measurement Method	Santa Clara Subbasin	Llagas Subbasin	Countywide Pumping	Accuracy
M&I	Metered	68,500	16,100	84,600	Within 2%
	Estimated	2,400	900	3,300	N/A
Domestic	Metered	100	200	300	Within 2%
	Estimated	100	1,000	1,100	N/A
Agricultural	Metered	2,200	16,500	18,700	Within 2%
	Estimated	900	6,400	7,300	N/A
Total		**74,200**	**41,100**	**115,300**	

Notes:

- As described above, the majority of groundwater pumping is metered. Smaller pumpers are required to report production semi-annually or annually on a fiscal year basis. Non-metered pumpers report groundwater pumping based on crop factors (agricultural use) or table of average uses (domestic use). In this table, estimated pumping shown for the water year is based on fiscal year reporting and typical pumping patterns.
- All values are rounded to the nearest hundred.

3.2 Surface Water Supply Used

In WY 2017, the District actively recharged about 96,800 AF of imported and local surface water in the Santa Clara and Llagas subbasins. The District also provided about 106,200 AF of in-lieu recharge in the form of treated water deliveries to retailers (cities and water companies) and raw surface water deliveries to customers. This is in addition to SFPUC deliveries to eight retailers overlying the Santa Clara Subbasin and recycled water deliveries by the District and four main producers in the county, which alleviate the demand on the groundwater subbasins. The District's long-term water conservation programs also saved about 72,000 AF, which further reduced the demand on groundwater.

District Managed Recharge

The District replenishes the groundwater subbasins with imported water and runoff captured in 10 local reservoirs. District recharge facilities include more than 300 acres of recharge ponds and over 90 miles of creeks. Imported sources include the SWP and the federal CVP. The use of imported or local water for managed recharge each year depends on many factors including hydrology, imported water allocations, treatment plant demands, and environmental needs. In general, a greater percentage of local water is used for recharge in wet years due to increased capture of local storm runoff in local reservoirs. In WY 2017, the District recharged about 78,900 AF of local and imported water in the Santa Clara Subbasin and about 17,900 AF in the Llagas Subbasin.

In-Lieu Use of Surface Water Supplies

District treated and raw surface water deliveries, SFPUC supplies to local retailers, and recycled water programs play a critical role in maintaining groundwater elevations and storage by reducing demands on groundwater. Table 2 summarizes the supplies from these categories in areas that were historically primarily or solely served by the two groundwater subbasins.

3.3 Total Water Use

Total water use in Santa Clara County in WY 2017 is summarized in Table 2. While the county boundary extends beyond the subbasins, the vast majority of the population and associated water use coincides with the subbasins. Water use categories are summarized in Table 2, along with their measurement methods and accuracy, water sources, and use sectors.

Table 2. Santa Clara County Water Use in AF for WY 2017

Water Use[1]	Santa Clara Subbasin	Llagas Subbasin	County-wide	Measurement Method	Accuracy	Source	Sector
Groundwater Pumped	74,200	41,100	115,300	Metered (90%) and estimated[2]	Within 2 percent (metered)	Natural recharge, managed recharge of local runoff and imported water (SWP/CVP)	M&I, domestic and agricultural[3]
District Treated Water	104,700	0	104,700	Metered	Within 2 percent	Local runoff and imported water	M&I
District Raw Surface Water Deliveries	400	1,100	1,500	Metered (95%) and estimated[2]	Within 2 percent (metered)	Local runoff and imported water	M&I, domestic and agricultural
SFPUC Supplies to Local Retailers[4]	44,200	0	44,200	Metered	Within 1.5 percent	Surface water reservoirs[5]	M&I
Recycled Water	15,000	1,800	16,800	Metered	Variable[6]	Treated wastewater	M&I and agricultural
Total[7]	**238,500**	**44,000**	**282,500**				

[1] All water use values are rounded to the nearest hundred.
[2] Production from some smaller wells and raw surface water users is estimated using a table of average uses or crop factors.
[3] Groundwater use by sector is shown in Table 1.
[4] San Francisco Public Utilities Commission (SFPUC) supplies water to eight (8) retailers in Santa Clara County and NASA-AMES.
[5] SFPUC primary sources are surface water reservoirs with runoff mainly from the Hetch Hetchy watershed and also from the Alameda watershed. More information is available at: https://sfwater.org/index.aspx?page=355.
[6] Recycled water meter accuracy varies as each of the four producers within the county uses different methods to measure production and delivery of recycled water.
[7] Local water rights used by the San Jose Water Company (SJWC) and Stanford within the Santa Clara Subbasin are not reflected in the total. In WY 2017, SJWC local water rights amounted to 1,700 AF. Stanford has historically used between 200 and 1,000 AFY.

3.4 Change in Groundwater Storage

Due to good water supply conditions, robust managed recharge, and continued lower groundwater use since the drought, the District estimates storage in the two subbasins increased by about 38,000 AF in WY 2017 compared to WY 2016. Storage in the Santa Clara Subbasin and Llagas subbasins increased by about 31,000 AF and 7,000 AF, respectively.

Figure 8 depicts the change in groundwater level from October 2016 to September 2017 at more than 200 water level wells in the Santa Clara Subbasin and more than 55 wells in the Llagas Subbasin, respectively. The corresponding change in storage, as estimated from the District's groundwater flow models, is also shown.

Figures 9 and 10 present the water year type, groundwater use, annual change in groundwater storage, and cumulative change in groundwater storage for the Santa Clara and Llagas subbasins, respectively, through WY 2017.

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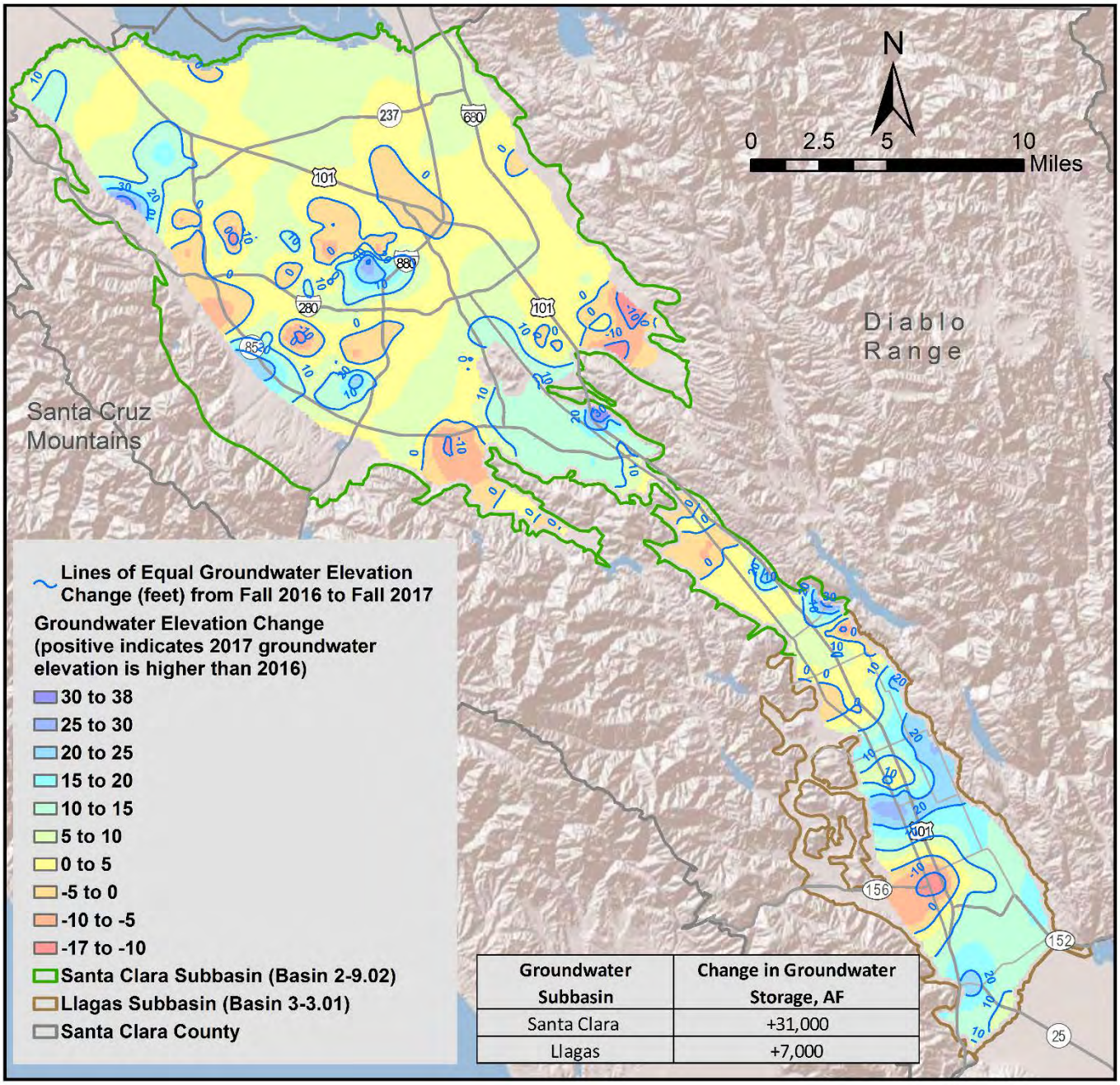
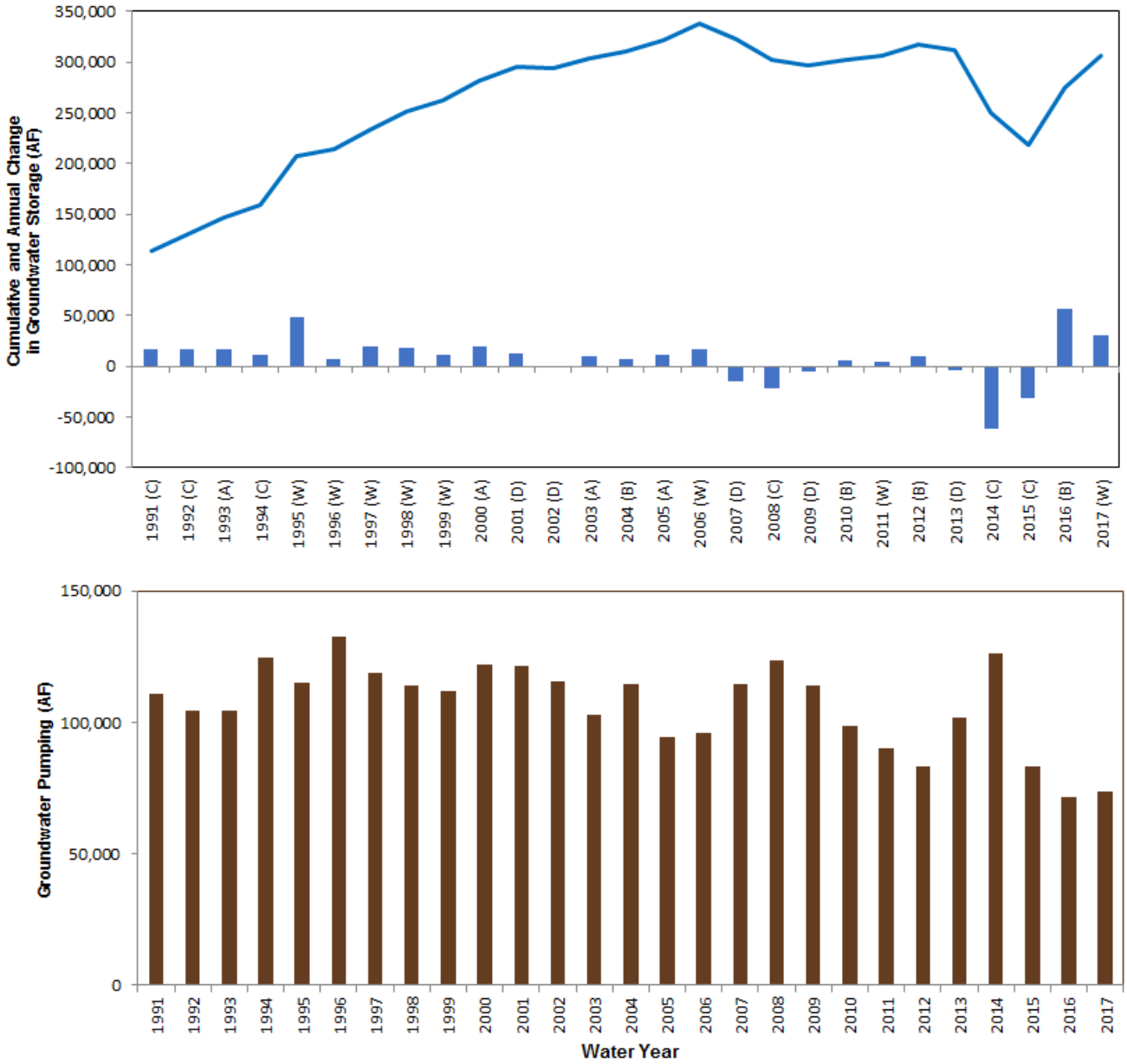
Figure 8. Change in Groundwater Elevation and Storage from October 2016 to September 2017



Groundwater Subbasin	Change in Groundwater Storage, AF
Santa Clara	+31,000
Llagas	+7,000

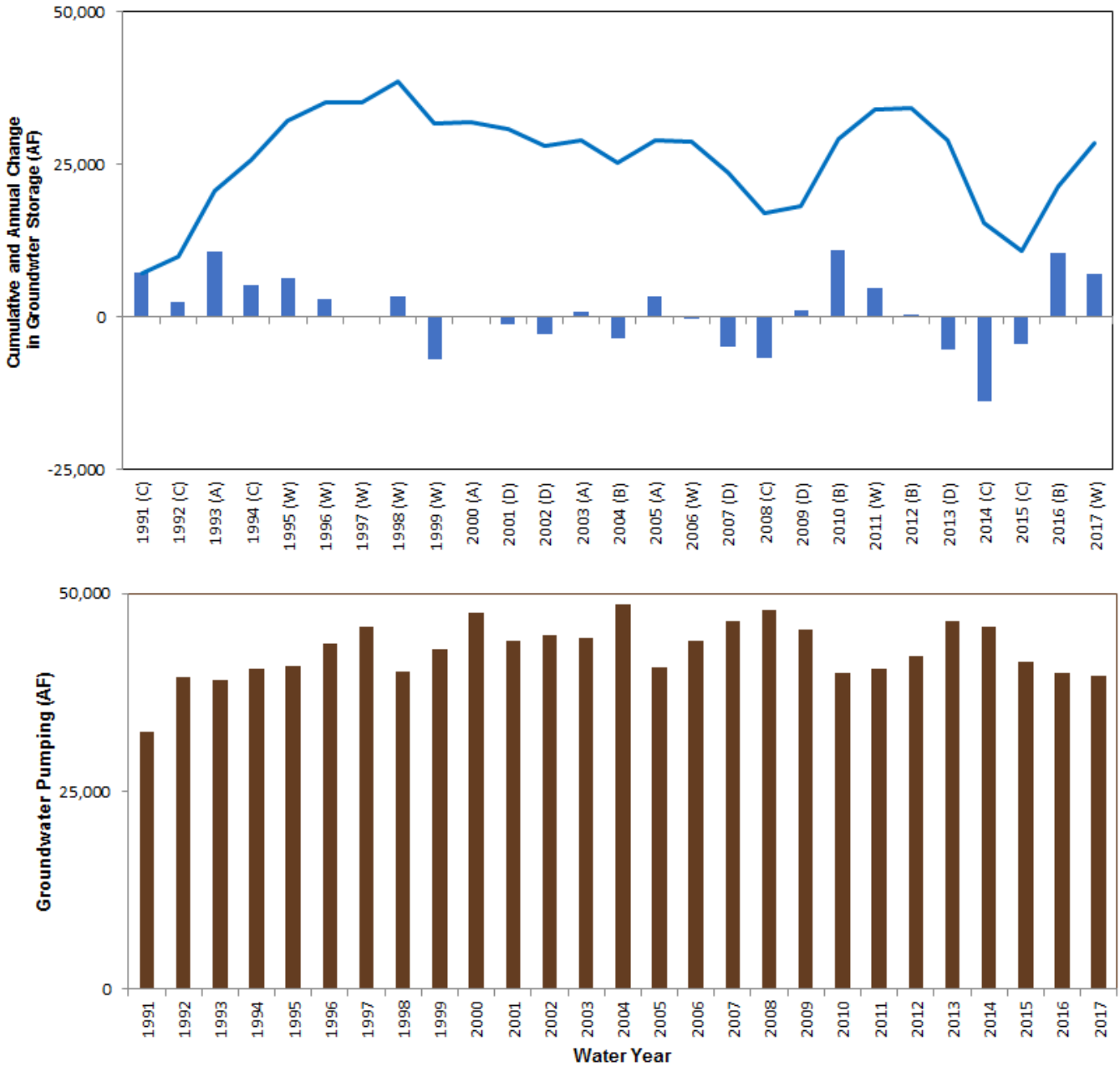
Figure 9. Groundwater Use and Change in Storage in the Santa Clara Subbasin



Notes:

- DWR SRI water year types are: Critical (C), Dry (D), Below Normal (B), Above Normal (A), and Wet (W).
- The storage graph begins in 1991 because the District estimates Santa Clara Subbasin storage using two numerical models. The Santa Clara Plain model for the northern Santa Clara Valley begins in 1970 while the Coyote Valley model for the southern part of the subbasin begins in 1991 as the District did not begin managing that area until the late 1980s.
- Most groundwater pumping is reported monthly and is reported here by water year. However, pumpers that report semi-annually or annually provide data based on the fiscal year (July 1 to June 30). For these reporters, groundwater pumping shown in this figure represents the fiscal year, which is presumed to be similar to the water year.

Figure 10. Groundwater Use and Change in Storage in the Llagas Subbasin



Notes:

- DWR SRI water year types are: Critical (C), Dry (D), Below Normal (B), Above Normal (A), and Wet (W).
- The storage graph begins in 1991 because the District estimates Llagas Subbasin storage using a numerical model that begins in 1991 as the District did not begin managing that area until the late 1980s.
- Most groundwater pumping is reported monthly and is reported here by water year. However, pumpers that report semi-annually or annually provide data based on the fiscal year (July 1 to June 30). For these reporters, groundwater pumping shown in this figure represents the fiscal year, which is presumed to be similar to the water year.

CHAPTER 4 – PLAN IMPLEMENTATION

The District continues to implement the comprehensive conjunctive management, groundwater monitoring, and groundwater protection programs described in the Plan. As a result, conditions in the Santa Clara and Llagas subbasins remained sustainable. In fact, groundwater levels and storage in the two subbasins have recovered to pre-drought conditions due to proactive drought response, improved water supplies, and significant recharge.

The District undertook several efforts related to SGMA compliance in WY 2017, including submittal of the 2016 Plan to DWR as an Alternative prior to the January 1, 2017 statutory deadline, and response to public comments. Throughout 2017, the District explored new SGMA authorities in coordination with interested stakeholders through the Board's Water Conservation and Demand Management Committee (Committee). Because the District Act provides broad authorities, these additional SGMA authorities relate to the ability to regulate pumping or well construction, and the ability to impose various types of fees. Nine publicly-noticed Committee meetings between December 2016 and December 2017 provided a transparent forum for discussion with interested stakeholders on how and when these authorities may be used. As a result, the District is further exploring the potential to implement a fixed charge as a component of groundwater production charges, which are currently volumetric charges. This would potentially reduce volatility in rates and revenues based on changes in water use.

The potential regulation of pumping or well construction, a complex and controversial topic, was discussed extensively through Committee meetings. Existing groundwater management programs and strong partnerships with large pumpers are expected to result in continued sustainable conditions and are the preferred way to address future challenges. However, pumping regulation may be needed in the future to address undesirable results should they occur. The primary SGMA-related work product from the Committee meetings was a process to describe the fundamental approach to respond to hypothetical worsening basin conditions. This includes the steps that would be taken prior to implementing SGMA authorities to regulate groundwater pumping, with a focus on providing some certainty on the process, while avoiding prescriptive requirements that may not be appropriate or effective. This process was memorialized via a resolution adopted by the District Board on February 27, 2018 (Appendix A).

The District will continue to submit annual reports required under SGMA to DWR by the April 1 deadline. The District also publishes a comprehensive annual groundwater report each June with more detailed information on pumping, recharge, water balance, groundwater levels and storage, land subsidence and groundwater quality for the previous calendar year. The most recent report, the Annual Groundwater Report for Calendar Year 2016, is posted on the District website.

Ensuring continued groundwater sustainability is central to the District mission to provide Silicon Valley a safe, clean water supply for a healthy life, environment, and economy. As such, the District will continue to "aggressively protect groundwater from the threat of contamination and maintain and develop groundwater to optimize reliability and to minimize land subsidence and salt water intrusion," in accordance with Board policy.

Appendix A

Resolution Memorializing the Process to Regulate Groundwater Extraction Under the Sustainable Groundwater Management Act, if Needed

BOARD OF DIRECTORS
SANTA CLARA VALLEY WATER DISTRICT

RESOLUTION NO. 18- 04

RESOLUTION MEMORIALIZING THE PROCESS TO REGULATE GROUNDWATER EXTRACTION UNDER THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT, IF NEEDED

WHEREAS, the Santa Clara Valley Water District Act (California Water Code Appendix, Chapter 60) provides the District with broad groundwater management authority, including the authority to protect, spread, store, retain, and cause water to percolate in the soil within Santa Clara County; and

WHEREAS, on September 16, 2014, the Sustainable Groundwater Management Act (SGMA) was signed into law and adopted into the California Water Code, commencing with Section 10720; and

WHEREAS, Water Code Section 10720.1 states that, in enacting SGMA, the intent of the legislature is to provide for the sustainable management of groundwater basins, to enhance local management of groundwater consistent with rights to use or store groundwater, to establish minimum standards for sustainable groundwater management, to provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater, and to achieve other listed intents; and

WHEREAS, on May 24, 2016, the District Board of Directors adopted Resolution 16-51 on the Decision to Become the Groundwater Sustainability Agency (GSA) for the Santa Clara and Llagas Subbasins; and

WHEREAS, on June 13, 2017, the District Board of Directors adopted Resolution 17-38 on the Decision to Become the GSA for the Portions of the Hollister and San Juan Bautista Subbasins Located Within Santa Clara County; and

WHEREAS, Water Code Section 10733.6(b)(1) identifies a plan developed pursuant to Part 2.75 (commencing with Section 10750) or other law authorizing groundwater management as an acceptable alternative to a Groundwater Sustainability Plan; and

WHEREAS, the 2016 Groundwater Management Plan (GWMP) describes the District's comprehensive framework to ensure continued, sustainable groundwater conditions in the Santa Clara and Llagas Subbasins; and

WHEREAS, on November 22, 2016, the District Board of Directors adopted the GWMP through Resolution 16-78; and

WHEREAS, the District submitted the GWMP to the California Department of Water Resources as an alternative pursuant to SGMA; and

WHEREAS, the GWMP acknowledges new authorities granted by SGMA, including the potential to regulate groundwater extraction, control well spacing or operation, and collect different types of fees, within the constraints identified in SGMA; and

WHEREAS, the existing groundwater management framework, which includes coordination with water retailers and other stakeholders, is expected to support continued, sustainable groundwater conditions; and

WHEREAS, the District Board of Directors directed the Water Conservation and Demand Management Committee (Committee) to engage stakeholders in evaluating the new SGMA authorities as potential tools that may be needed to ensure continued sustainability; and

WHEREAS, the Committee engaged water retailers and other interested stakeholders during nine publicly-noticed meetings between December 2016 and December 2017; and

WHEREAS, the Committee considered stakeholder input in developing the Process to Regulate Groundwater Extraction under the Sustainable Groundwater Management Act, if Needed, attached hereto as Exhibit A; and

WHEREAS, the Process to Regulate Groundwater Extraction under the Sustainable Groundwater Management Act, if Needed, describes the approach to respond to worsening basin conditions, including the steps that would be taken prior to implementing SGMA authorities to regulate extraction.

NOW, THEREFORE BE IT RESOLVED that the Board of Directors of the Santa Clara Valley Water District:

1. Hereby adopts the Process to Regulate Groundwater Extraction under the Sustainable Groundwater Management Act, if Needed; and

2. All the recitals in this Resolution are true and correct and the District so finds, determines, and represents.

PASSED AND ADOPTED by the Board of Directors of the Santa Clara Valley Water District by the following vote on February 27, 2018:

AYES: Directors N. Hsueh, T. Estremera, B. Keegan, G, Kremen, L. LeZotte, J. Varela, R. Santos

NOES: Directors None

ABSENT: Directors None

ABSTAIN: Directors None

SANTA CLARA VALLEY WATER DISTRICT

By: Richard P. Santos

RICHARD P. SANTOS
Chair/Board of Directors

ATTEST: MICHELE L. KING, CMC

Michele L. King

Clerk/Board of Directors

EXHIBIT A
COVERSHEET

PROCESS TO REGULATE GROUNDWATER EXTRACTION UNDER THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT, IF NEEDED

No. of Pages:	6
Exhibit Attachment:	Attachment 1: Process to Regulate Groundwater Extraction under the Sustainable Groundwater Management Act, if Needed

PROCESS TO REGULATE GROUNDWATER EXTRACTION UNDER THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT, IF NEEDED

INTRODUCTION

The Santa Clara Valley Water District (District) has sustainably managed the Santa Clara and Llagas Subbasins for many decades under the authority of the District Act. In 2014, the Sustainable Groundwater Management Act (SGMA) was enacted as California's first comprehensive, statewide regulatory program for groundwater. SGMA provides Groundwater Sustainability Agencies (GSAs), like the District, with various authorities to manage groundwater.

SGMA authorities include the ability to regulate pumping and assess different types of groundwater charges. These authorities have been discussed in various meetings of the District Board of Directors (Board) Water Conservation and Demand Management Committee (Committee) in an open forum and with input from interested stakeholders.

The existing, proven groundwater management approach, which includes strong partnerships with large groundwater pumpers, is expected to result in continued, sustainable groundwater management in the future and is the preferred approach to addressing future challenges. This document describes the approach to implementing SGMA authorities to regulate groundwater extraction, should such regulation become needed in the future.

BACKGROUND

SGMA established new requirements for GSAs, including the development of Groundwater Sustainability Plans (GSPs) or prescribed Alternatives. In 2016, the District prepared the 2016 Groundwater Management Plan (GWMP), which was approved by the Board following a public hearing on November 22, 2016. The District submitted the GWMP as an alternative to a GSP to the California Department of Water Resources (DWR) in December 2016. The GWMP acknowledged the new SGMA authorities and committed the District to work collaboratively with groundwater pumpers and other stakeholders to further evaluate the authorities. The Board referred related stakeholder engagement to the Committee.

The Committee, stakeholders, and the Board have indicated interest in the use of a fixed charge as a component of the groundwater production charge, and the District will further explore this concept. Committee items on the potential regulation of pumping and related discussion with stakeholders have led to the development of this process, or implementation framework.

SGMA provides GSAs with various authorities to ensure groundwater management and use do not cause undesirable results, which are defined as one of more of the following per Water Code §10721:

1. Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon.
2. Significant and unreasonable reduction of groundwater storage.
3. Significant and unreasonable seawater intrusion.
4. Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.

5. Significant and unreasonable land subsidence that substantially interferes with surface land uses.
6. Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

Per Water Code §10726.4(a), in regulating groundwater extraction, SGMA allows a GSA to:

1. impose spacing requirements on new wells and impose reasonable operating regulations on existing wells to minimize well interference by restricting or suspending well production;
2. control groundwater extractions by regulating, limiting, or suspending extractions, new well construction, well enlargement, or abandoned well reactivation, or by establishing allocations;
3. authorize temporary and permanent transfers of extraction allocations; and
4. establish rules to allow unused extraction allocations to be carried over from one year to another and voluntarily transferred.

However, SGMA acknowledges limitations on the regulation of pumping. Local agencies are not authorized to make a binding determination of the water rights of any person or entity (Water Code §§ 10720.5(b) and 10726.8(b)). Also, any actions to control extractions generally must be consistent with the city or county general plans (Water Code §§ 10726.4, 10726.8(f), and 10726.9).

Research into the use of similar authorities in other jurisdictions indicates that few agencies regulate pumping, and highlights related challenges. Where used, pumping regulation has been in response to significant basin problems like long-term overdraft or salt water intrusion, most commonly through the well permitting process. These agencies have struggled with well owner concerns, enforcement, and legal challenges. Others have decided against regulation due to concerns with water rights and the potential to trigger adjudication, focusing instead on financial incentives or groundwater replenishment.

GUIDING PRINCIPLES

The District's existing groundwater management framework has maintained sustainable groundwater conditions over many decades. This proven framework, including strong collaboration with stakeholders, is the preferred approach to address future challenges. However, SGMA authorities are available as potential tools if the need arises. The process to regulate groundwater extraction, if needed, is based on these guiding District principles:

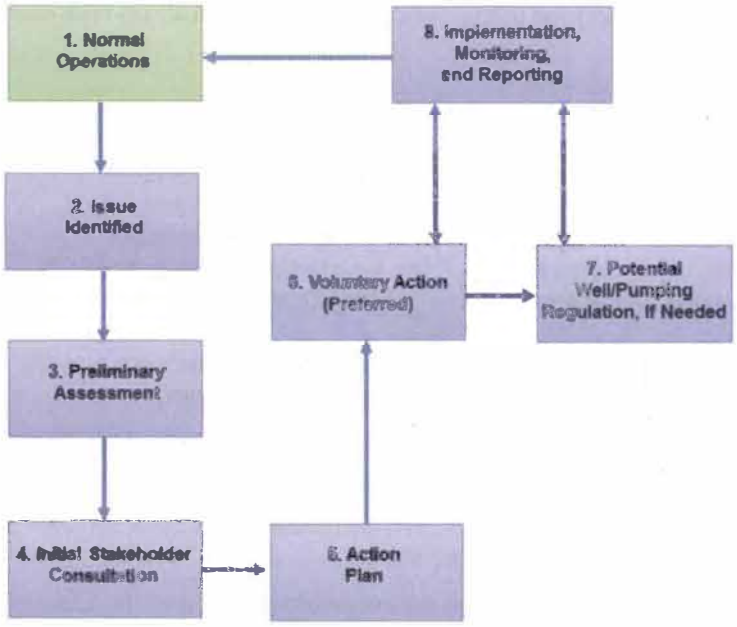
1. The District will sustainably manage local groundwater as part of our mission to provide Silicon Valley safe, clean water for a healthy life, environment, and economy.
2. The District will continue to conduct comprehensive water supply planning and invest in diverse water supplies to ensure reliability and avoid chronic shortages.
3. Through ongoing water supply operations, the District will continue to optimize the use of available water supplies while protecting groundwater storage.
4. Transparency in fulfilling the District mission remains an important driver and the District will continue to encourage input and participation from all interested stakeholders.

5. The District will continue to seek solutions that effectively and efficiently address identified water supply issues as they arise.
6. The District will work with water retailers and other stakeholders to continue to improve our understanding and management of groundwater basins and conditions, including sustainable use.
7. Strong partnerships with water retailers and other large groundwater users have been effective in avoiding undesirable results and are critical to future sustainability.
8. Collaboration with groundwater users and interested stakeholders will continue to be the preferred approach to address observed or projected undesirable results, and District regulation of pumping will only be considered if there is no viable alternative.
9. Given the uncertainty in the timing, location, and severity of potential future undesirable results, the process to regulate groundwater extraction avoids prescriptive triggers and requirements; instead, it clarifies how to respond to worsening conditions. This will maintain maximum flexibility to respond to changing conditions and avoid unnecessary or ineffective actions.

PROCESS TO REGULATE GROUNDWATER EXTRACTION, IF NEEDED

The existing groundwater management framework is expected to support continued, sustainable conditions, and pumping regulation may never be needed. The process described below and summarized in Figure 1 describes the fundamental approach to respond to worsening basin conditions, including the steps that would be taken prior to implementing SGMA authorities to regulate extraction. As mentioned above, the focus is on providing certainty as to the process, while avoiding prescriptive requirements that may not be appropriate. This process allows for moving between the various steps linearly or using feedback loops.

Figure 1. Process to Regulate Groundwater Extraction, if Needed



1. Evaluate groundwater conditions, coordinate with water retailers, and receive stakeholder input
2. Identify new regulatory requirement or observed/projected undesirable result
3. Prepare memo describing issue and potential mitigation (e.g., additional supplies and/or demand reduction)
4. Meet with affected pumpers and/or other stakeholders to discuss issue and preliminary assessment
5. Develop draft action plan with stakeholder input, including desired outcome, roles, actions, schedule, monitoring, and reporting
6. Agree to implement voluntary actions to address issue (preferred)
7. Develop Board ordinance to implement SGMA authorities through Committee and public process
8. Implement voluntary and/or mandatory actions described in action plan and/or ordinance, monitor and report out to Board and stakeholders

Note: Depending on the severity and challenges of the issue identified, the implementation of any step could be elevated to the Committee and/or Board

Step 1: Normal Operations

Comprehensive planning through the District's Urban Water Management Plan and Water Supply Master Plan ensures long-term water supply reliability (including groundwater) in accordance with level of service targets. Development of these plans includes coordination with water retailers and land use agencies, and the District encourages input from interested stakeholders. This regular, proactive planning avoids chronic shortages.

Operations planning helps meet near-term demands, protect groundwater reserves, and ensure adequate carryover supplies. Through this ongoing process, District staff develops operations scenarios based on the availability of imported and local supplies, including their optimal use and distribution. Water supply conditions are discussed with water retailers at least quarterly through Water Retailers Committee and Groundwater Subcommittee meetings, but operational or water supply issues often require more frequent communication and coordination. Current water supply information is also communicated to interested stakeholders through monthly Water Tracker updates and Groundwater Condition Reports, and the availability of groundwater level and other water supply data at www.valleywater.org.

Receiving input on groundwater management issues from interested stakeholders is an important part of normal operations. Accordingly, the District maintains a list of interested parties that includes water retailers, land use agencies, regulatory agencies, adjacent GSAs, non-governmental organizations, community groups, agricultural users, and private individuals, among others. The District notifies these interested parties of upcoming groundwater-related Board and Committee items and relevant information such as completion of the Annual Groundwater Report. The District also provides updates to all well owners on general topics of interest through regular mailings.

The District will continue to explore ways to ensure interested stakeholders are aware of groundwater management activities and opportunities for engagement, including participation in public meetings, Board correspondence, Access Valley Water inquiries, or direct communication with staff. The District evaluates all input and inquiries to determine if additional action is needed to protect groundwater resources.

Step 2: Issue Identified

Through the ongoing assessment of groundwater conditions described above, an issue requiring further action may be identified. This could be a new regulatory requirement, such as the need to limit water supply well construction near an indirect potable reuse project, or an observed or projected undesirable result as defined in Water Code §10721 and listed above. The GWMP identifies numeric outcome measures related to groundwater conditions that indicate the need for action; observed or projected failure to meet one of the outcome measures could lead to an undesirable result. There may also be unanticipated situations that do not trigger failure of an outcome measure, but require action to protect groundwater resources. If an issue requiring further action is identified, the District will inform potentially affected stakeholders and immediately move to the next step in the process.

Step 3: Preliminary Assessment

Once an issue requiring further action has been identified, District staff will use available information to evaluate the issue and summarize the findings in a technical memorandum. The memorandum will describe the nature and extent of impacts, suspected cause(s), potential

effects of taking no action, and potential mitigation options. These options may include District action, such as more focused monitoring, recommended shortage response per the Water Shortage Contingency Plan, efforts to acquire supplemental supplies, or incentives for the use of treated water. Mitigation options could also include the reduction of pumping within the impacted area.

Step 4: Initial Stakeholder Consultation

After completing the prior step, District staff will meet with selected stakeholders within the affected area to discuss groundwater conditions and the preliminary assessment. This initial consultation targets those likely needing to take action to help address the issue. In most cases this is expected to include higher-volume pumpers like water retailers that more strongly influence basin conditions. Depending on the nature of the issue, other affected stakeholders may also be consulted during this stage.

The District will work with stakeholders to evaluate additional data and update the preliminary assessment as necessary. The District and affected stakeholders will identify the schedule to develop an action plan as well as related roles and responsibilities.

It should be noted that this consultation may result in quick consensus on the need to act and what needs to be done. This occurred in 2014 when the District met with staff from the San Jose Water Company and the City of Santa Clara to discuss concerns with groundwater levels approaching subsidence thresholds within their service areas. In that case, a single meeting led to quick agreement on the need to voluntarily adjust pumping. This process is intended to support similar decisive action at the staff level when possible.

Step 5: Action Plan

Based on the timeline and roles identified during the initial stakeholder consultation, District staff and/or affected stakeholders will develop a draft action plan to address the issue. This action plan will identify the desired outcome and clearly define actions needed, roles and responsibilities, implementation schedule, and how the issue will be monitored. The action plan will also explain the mechanism and timing of status reports to the Board and interested stakeholders. If the proposed mitigation involves pumping curtailment, staff recommends that affected pumpers have the first opportunity to propose an action plan to meet the desired outcome.

In the 2014 example mentioned above, District and retailer staff collaborated quickly and effectively to reduce localized pumping and minimize the risk of subsidence. Similarly, it is expected that some issues can be effectively resolved at the staff level, with ongoing reporting to the Board Committee and stakeholders as appropriate. However, effective action plans for more severe, challenging, or widespread issues may need to be elevated to allow for more extensive input. In these cases, it may be appropriate to develop the action plan in consultation with all potentially interested stakeholders through the open forum of the Board Committee.

Step 6: Voluntary Action (Preferred Option)

Staff, affected pumpers, and other interested stakeholders will work to finalize an action plan that is likely to be effective in addressing the identified issue. This is the preferred option, which avoids resorting to the need to potentially regulate pumping under SGMA authorities. If

agreement for voluntary action is reached, all entities responsible for implementing the action plan will need to concur with the action plan prior to implementation.

Step 7: Potential Well/Pumping Regulation, if Needed

The District and affected pumpers may not reach consensus on a voluntary action plan or implementation of a voluntary action plan may not prove effective in addressing the identified issue. In those cases, the District may need to consider implementing any of the authorities provided by SGMA under the following process:

1. Discuss groundwater conditions and the potential need for pumping regulation at the Water Conservation and Demand Management Committee and receive input from the Committee and stakeholders;
2. Implement action recommended by the Committee, which may include, but not be limited to, discussion with the full Board, further District action, or additional attempts to reach consensus on voluntary action;
3. Prepare a draft ordinance to regulate groundwater extraction in accordance with Water Code §10726.4 or otherwise exercise authorities provided by SGMA; and
4. Conduct a public hearing for Board consideration of the proposed ordinance.

Step 8: Implementation, Monitoring, and Reporting

The District, affected pumpers, and other identified stakeholders will implement the voluntary and/or mandatory actions described in the action plan and/or ordinance. District staff will monitor the status of action commitments, groundwater conditions, and performance in meeting the desired outcome. Related reporting to the Committee and/or Board as well as interested stakeholders will be in accordance with the action plan or ordinance. Based on the monitoring results and progress toward meeting the desired outcome, operations may return to normal or the voluntary/mandatory action may need to be modified. Successful execution of this step will require close tracking/monitoring and good communication.

TIME FRAME FOR IMPLEMENTATION OF THE PROCESS

There are no fixed time frames assigned to each step above due to the wide range of possibilities in terms of potential issues and related action needed, including whether it is voluntary or mandated. Staff anticipates that, for more manageable issues, effective voluntary action could be implemented within six months. More severe or widespread issues may take longer to address, even through voluntary action, as they may require consideration by a city council, board, or regulatory agency, or due to implementation lead time.

It is expected that if pumping regulation became necessary, implementation of the process listed under Step 7 would take several months to provide adequate noticing and opportunity for input. This time frame should be considered to correspond to the most extreme and severe conditions, with more time likely needed to fully engage potentially affected pumpers and interested stakeholders on this complex and controversial issue.

The severity of the issue will correspond to the response, with more resources and urgency allocated to more extreme issues. In any case, the District will work to expedite an effective response to minimize the risks to beneficial users or groundwater resources, and will remain committed to prioritizing voluntary collaboration over regulation whenever possible.

Santa Clara Valley Water District
5750 Almaden Expressway, San Jose, CA 95118-3686
Phone: (408) 265-2600 Fax: (408) 266-0271
www.valleywater.org

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